

KUB-100US

Appln. No.: 10/051,546
Amendment Dated: January 30, 2004
Reply to Office Action of November 12, 2003

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

- 1 1. (Original) An imaging system comprising a surface for receiving an image, and a light
2 modulator comprising a plurality of light valves in a two-dimensional array having orthogonal
3 rows and columns in a first Cartesian coordinate system having a first and a second orthogonal
4 axes, said columns arrayed along said first axis in the coordinate system; said rows arrayed
5 along the second axis and a number of said rows forming a segment; and wherein said surface
6 is transported relative to the modulator in a direction along a transport axis; wherein the first
7 axis and the transport axis form an angle other than 90° , said angle α inversely proportional to
8 the number of rows in the segment;

9 wherein the number of rows in the segment is n ; n is an integer greater than 1; and the
10 modulator comprises at least 2 segments; further wherein each light valve has an X dimension
11 along the first axis and a Y dimension along the second axis, and $X=Y$ and the angle $\alpha = \tan^{-1}$
12 $(1/n)$.
- 1 2. (Original) The imaging system according to claim 1 wherein said angle is between about 20°
2 and 45° .
- 1 3. (Original) The imaging system according to claim 1 further comprising a radiant energy
2 source and at least one lens for directing said radiant energy onto said modulator.
- 1 4. (Original) The imaging system according to claim 1 further comprising at least one lens for
2 directing said radiant energy onto said surface.
- 1 5. (Original) The imaging system according to claim 1 wherein said surface comprises a
2 printing plate.
- 1 6. (Original) The imaging system according to claim 1 wherein said surface comprises an
2 image detecting element.
- 1 7. (Original) The imaging system according to claim 6 wherein said image detecting element is
2 a photosensitive layer.

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- 1 8. (Original) The imaging system according to claim 1 wherein said image detecting element is
2 a plurality of photosensitive elements.
- 1 9. (Original) The imaging system according to claim 1 wherein said imaging surface is an
2 image display surface.
- 1 10. (Original) The imaging system according to claim 1 further comprising a modulator
2 controller connected to said modulator for turning on and off any selected number of light
3 valves in said light valve array.
- 1 11. (Original) The imaging system according to claim 10 further comprising a transporter for
2 transporting said surface in a plane defined by said first coordinate system in the transport
3 direction.
- 1 12. (Original) The imaging system according to claim 11 further including means for
2 synchronizing said surface transporter and said modulator controller to repeatedly expose a
3 same selected area on said surface using light valves in different light valve rows thereby to
4 effect cumulative exposure of a desired surface area.
- 1 13. (Original) The imaging system of claim 1 wherein the surface for receiving an image is
2 wrapped around a cylindrical drum which rotates in the transport direction.
- 1 14. (Original) The imaging system of claim 1 wherein the surface for receiving an image is
2 positioned on a flatbed.
- 1 15. (Original) The imaging system of claim 1 further comprising a transport head that
2 transports the light valve array, and wherein the imaging surface is a cylindrical drum and the
3 transport head rotates around the cylindrical drum in the transport direction.
- 1 16. (Original) The imaging system according to claim 1 further comprising:
2 (a) a source of radiation and an optical projection system for directing at least a portion of said
3 radiation onto said modulator and therefrom onto said surface; and
4 (b) a scanning means for scanning said radiation on said surface.

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1 17. (Original) The imaging system of claim 1 wherein the light modulator is selected from the
2 group consisting of an optical switch, a MEMS device, an electro-holographic device, an
3 acousto-optic device, a liquid crystal display device, a Bragg grating device, a bubblejet device,
4 a thermo-optic interferrametric device and a thermo capillary device.

1 18. (Original) The imaging system of claim 1 wherein the surface for receiving an image is
2 selected from the group consisting of a photosensitive surface, a display screen, a circuit board,
3 and a radiation detection device.

1 19. (Currently Amended) A method of imaging ~~using comprising adjusting the light valves of~~
2 the imaging system of claim 1 ~~wherein the light valves to~~ provide radiation below the exposure
3 threshold of the image receiving surface.

1 20. (Currently Amended) An A method of imaging comprising:

2 (A) positioning a surface for receiving an image at a focal point of a light modulator;
3 said light modulator comprising a plurality of light valves in a two-dimensional array having
4 orthogonal rows and columns in a first Cartesian coordinate system having a first and a second
5 orthogonal axes, said columns arrayed along said first axis in the coordinate system; said rows
6 arrayed along the second axis;

7 (B) forming a segment comprising a number of said rows;

8 (C) activating said light valves;

9 (D) transporting said surface relative to the modulator in a direction along a transport axis,
10 wherein the first axis and the transport axis form an angle α other than 90° , said angle α
11 inversely proportional to the number of rows in the segment;

12 wherein the number of rows in the segment is n ; n is an integer greater than 1; and the
13 modulator comprises at least 2 segments;

14 further wherein each light valve has an X dimension along the first axis and a Y dimension
15 along the second axis, and $X=Y$ and the angle $\alpha = \tan^{-1}(1/n)$.